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Chlamydia trachomatis in Adolescents

Chlamydia trachomatis is the most common sexually transmitted disease agent, and a young age appears to be an important risk factor related to its genital infections. Prevalence rates for endocervical infection have been reported at between 8% and 22% among adolescent girls attending teen clinics to as high as 37% among those presenting for prenatal care. Although comparable statistics are currently not available, there are indications that chlamydia may be a common infection among adolescent boys as well. Clinical syndromes frequently associated with chlamydial infection include urethritis in males and cervicitis and pelvic inflammatory disease among females.

Infection with *Chlamydia* in patients with pelvic inflammatory disease results in the most serious sequelae—tubal infertility. It has been estimated that a 15-year-old sexually active girl has a risk of 1:8 of pelvic inflammatory disease developing, compared with a risk of only 1:80 in a 25-year-old woman. Yet it is difficult for both patient and physician to recognize chlamydial infections, as patients frequently present with few or no clinical symptoms or signs. A lack of simple, inexpensive and reliable tests has hindered recognition and control of the chlamydial epidemic among adolescents as well. Tissue culture is currently the gold standard of diagnostic tests but requires costly, sophisticated cell culture techniques, does not render an immediate result and is not widely available to most clinicians. Recently less expensive, rapid, nonculture, fluorescent antibody techniques have been introduced. Evaluation of the performance of such tests, however, among populations who do not attend sexually transmitted disease clinics is limited. Among adolescent boys, there is evidence that screening for pyuria in the first-catch urine specimen (10 or more leukocytes per high-power field, spun urine) may be helpful in identifying occult chlamydial urethritis. The rapid nonculture fluorescent antibody techniques appear to be less sensitive in determining chlamydial infection among men (urethra) than among women (endocervix). Such techniques, therefore, are not recommended for screening male patients for chlamydial infection.

In light of our current limited diagnostic capabilities and of the importance of the role of chlamydial infections in infertility, the Centers for Disease Control have made recommendations regarding the screening and treatment of populations considered at high risk for chlamydial infection. All adolescents with the following symptomatic syndromes associated with chlamydia should receive treatment for chlamydial infection: nongonococcal urethritis, mucopurulent cervicitis, pelvic inflammatory disease and epididymitis. Decisions regarding treatment should be made in conjunction with culture results when available. Because mucopurulent cervicitis, pelvic inflammatory disease and epididymitis are also associated with *Neisseria gonorrhoeae* infection, such patients should also receive effective antigonococcal treatment. Sexual contacts of persons with the above clinical syndromes should be evaluated and treated for presumed chlamydial infection. Routine chlamydial screening of asymptomatic adolescent girls, both pregnant and nonpregnant, is recommended using culture (when available) or rapid nonculture fluorescent antibody techniques. Adolescent boys may be screened by culture or by analysis of a first-catch urine specimen, with the knowledge that information on screening asymptomatic young men is limited. While it is anticipated that improved, cost-effective diagnostic capabilities will be available in the future, the importance of *Chlamydia* in the development of infertility among our youth dictates the current recommendations for treatment and screening of sexually active adolescents.

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Intravenous Immune-Globulin Therapy in Pediatric Hematology

INTRAVENOUS IMMUNE-GLOBULIN THERAPY has recently been shown to be useful in managing autoimmune hematologic disorders. The peripheral blood cells—platelets, erythrocytes and neutrophils—in patients with these disorders are coated with antibodies, predominantly immunoglobulin (Ig)G, and are prematurely removed from the circulation by the reticuloendothelial system, primarily the spleen. The mechanism of action of immune globulin given intravenously (IV) has not been elucidated completely. A number of mechanisms have been proposed, but the best studied and perhaps the most important involves the competitive blockade of specific receptors on macrophages and monocytes within the reticuloendothelial system for the Fc region of the IgG molecule, resulting in improved survival of the antibody-coated cells. Fc-receptor function returns to normal, however, in about four weeks and does not explain the prolonged remission seen in some patients following IV immune-globulin therapy. This suggests that other mechanisms such as decreased antibody production may be involved.

Much of the clinical experience with IV immune-globulin therapy for hematologic disorders has been gained in the treatment of children with immune thrombocytopenic purpura. In several studies a significant rise in the platelet count was shown within one week in 75% to 100% of patients with acute and chronic immune thrombocytopenic purpura. In as many as half of the patients the response is sustained but, in many, periodic booster infusions are required to maintain adequate counts. Children, in contrast to adults, have a higher initial increase in the platelet count, a lower incidence of relapse and a longer duration of response. In addition to this disorder, IV immune-globulin therapy has also been used successfully in the treatment of neonatal isoimmune thrombocytopenia, autoimmune neutropenia and Coombs-positive hemolytic anemia.

The optimal dose of IV immune-globulin has not been established. In most studies 0.4 grams per kg per day was infused over four to eight hours for five consecutive days. A dose of 1 gram per kg per day for one to three days has also been effective. Subsequent booster doses are given as needed.